

ASML Holding N.V.

Ratings

| Rating Type | Rating | Outlook | Last Rating Action |
|---------------|--------|---------|----------------------|
| Long-Term IDR | A- | Stable | Affirmed 14 Feb 2020 |

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The rating of ASML Holding N.V. takes into account the importance of lithography tools in the production of semiconductors. As semiconductor content becomes ever more pervasive in communications, industry and consumer electronics, chip manufacturers rely on ever-greater feature shrink (the size of individual features that can be etched onto a silicon wafer) and improved wafer yield (the speed at which a wafer can be processed) to drive scale economies and greater chip capabilities. Lithography is a key technology that enables this.

ASML has modelled its medium-term revenue opportunity at between EUR15 billion and EUR24 billion. With extreme ultraviolet (EUV) lithography firmly established as the next generation of leading-edge production systems, Fitch Ratings believes ASML's well-established revenue and cash flow has material upside. Further rating support is provided by a conservative financial policy combined with an increasing proportion of recurring revenues coming from field service sales.

Key Rating Drivers

Lithography Leader: ASML is the market leader in the design and assembly of lithography tools, the technology that sits at the heart of semiconductor production. The semiconductor market is worth USD400 billion, and we expect it to grow strongly in the long term (in both volume and value), as chips become ever smaller and evermore pervasive in all areas of daily life. ASML has been instrumental in the development of both feature shrink and wafer throughput, which creates efficiencies and capacity improvements in chip technology. Fitch believes ASML's focus on leading-edge technology positions it at a critical point in the chip production value chain.

Strong 2019 Performance, Weak Market: ASML reported a record year in 2019, with sales reaching EUR11.8 billion and an operating margin of 23.6%, despite demand from its memory customers remaining weak. These conditions are reported to remain weak. Nonetheless, ASML is on track for double-digit growth in 2020, which would represent potential sales of EUR13 billion.

ASML has said the level of demand from its memory customers has affected its gross margin. A weaker memory revenue mix delivered a lower gross margin in the financial year to end-December 2019 (FY19) than we anticipated in our rating case. We expect a recovery in memory and a revenue mix led by deep ultraviolet (DUV; currently ASML's most profitable generation of system) to underpin results in 2020.

EUV Systems: The latest generation of lithography systems is EUV; a technology capable of delivering feature shrink as low as single-digit nanometres. These tools sell in excess of EUR100 million each, at multiples of average selling prices, and are starting to see increased use in the commercial wafer production of ASML's leading customers. The company shipped 26 EUV systems in 2019 (2018: 18) and expects to deliver 35 EUV systems in 2020.

The lead time to research and develop a next-generation tool takes many years, while commercial adoption provides the industry's technology roadmap and ASML's revenue path for the following decade.

Margin Expansion: ASML has a good performance record, in line with near- and medium-term guidance. Revenue visibility is low, with the company giving guidance on a range of medium-term outcomes, but near-term guidance regarding costs and key cash flow items is accurate. Lower unit volumes and high production costs in EUV have diluted the gross margin. However,

Applicable Criteria and Related Research

[Corporate Rating Criteria \(February 2019\)](#)

[Corporates Notching and Recovery Ratings Criteria \(October 2019\)](#)

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we expect this effect to dissipate in 2020 as EUV production cycles reduce and volumes increase.

Fitch's rating case envisages a gross margin at the group level in the high forties in 2020, with potential to reach 50% in the medium term. Margins and cash flow typically weaken but recover relatively quickly in a downturn.

Service and Field Option Sales: A growing component in the revenue mix is service and field option revenue. This is effectively after-sales support where ASML's engineers provide maintenance services, install new applications and relocate customers' systems. In 2019, field revenue amounted to almost a quarter of sales. In Fitch's view, this revenue is of an increasingly recurring nature and has a high margin when tied to earlier-generation systems (e.g. DUV).

ASML has a strong growth outlook but fairly limited near-term visibility. In Fitch's view, this evolving revenue mix provides increasing stability and further support for earnings and the cash flow profile.

Capex and EUV Capacity: The more complex and sophisticated a system is, the longer the production lead-time. ASML has talked about an EUV production cycle of 20 months, and says its existing EUV clean-room facilities have an annual unit capacity of 50 EUV tools. An emphasis on reducing production cycle time should increase this capacity and improve working capital cash flow. The company has publicly guided that 2020 capex will be EUR1.1 billion. We consider that further demand for EUV in 2021 could keep capex at fairly high levels beyond 2020.

Conservative Financial Policy: The historical volatility of ASML's end-markets led to a volatile demand environment for lithography; a feature that has in turn led to ASML's conservative financial policy. Fitch views earnings volatility as currently more limited, given ASML's revenue and market share, but the company maintains a disciplined financial approach.

The business is strongly cash-generative. Our rating case envisages a pre-distribution free cash flow (FCF) margin of 20% and higher. ASML confirmed its approach to its financial policy in 4Q19 when the company curtailed planned share buybacks to preserve liquidity.

Cash Buffer: ASML targets a gross cash buffer of EUR2.0 billion-2.5 billion to ensure liquidity in a market downturn. Fitch expects the balance sheet to remain either net cash or with nominal net debt, and with the cash buffer more likely towards the higher end of this range.

Financial Summary

| (EURm) | Dec 2017 | Dec 2018 | Dec 2019 | Dec 2020F | Dec 2021F | Dec 2022F |
|-------------------------------|----------|----------|----------|-----------|-----------|-----------|
| Gross revenue | 9,053 | 10,944 | 11,820 | 13,012 | 13,705 | 14,330 |
| Operating EBITDAR margin (%) | 32.7 | 31.6 | 27.4 | 32.6 | 34.6 | 35.1 |
| FFO margin (%) | 30.5 | 28.6 | 27.2 | 30.1 | 31.6 | 31.9 |
| FFO fixed-charge coverage (x) | 20.7 | 25.4 | 22.9 | 28.9 | 30.8 | 32.4 |
| FFO adjusted net leverage (x) | 0.0 | -0.1 | -0.3 | -0.2 | -0.1 | -0.1 |

Source: Fitch Ratings, Fitch Solutions

Rating Derivation Relative to Peers

ASML has one of the strongest cash-generative capabilities in the technology sector, which is supported by a revenue market share in its niche segment in excess of 80%. The company's technology supports the development and innovation of the much bigger semiconductor manufacturing sector. Barriers to entry are created by knowledge, technology expertise, capital investment requirements and customer partnerships. Exposure to cyclical and product concentration risks is managed through conservative and flexible financial policies. These factors mean the company is strongly positioned compared with its semi-conductor equipment and process control peers, such as KLA Corporation (BBB+/Positive) and Applied Materials Inc.

Navigator Peer Comparison

| Issuer | Business profile | | | | | | | | Financial profile | | | |
|--------------------------------|------------------|-----------------------|-------------------------------------|------------------------------|--------------|---------------------------|-----------------|---------------|---------------------|-----------------------|--|--|
| | IDR/Outlook | Operating Environment | Management and Corporate Governance | Sector Competitive Intensity | Sector Trend | Company's Market Position | Diversification | Profitability | Financial Structure | Financial Flexibility | | |
| ASML Holding NV. | A-/Sta | aa | a | a | bbb+ | a | bbb- | a- | a+ | a | | |
| KLA Corporation | BBB+/Pos | aa | bbb | a | bbb- | a+ | bb | a+ | bbb+ | a | | |
| Nokia Corporation | BBB-/Sta | aa- | a- | bb+ | bbb- | bbb | bbb- | bbb- | bbb | bbb+ | | |
| NXP Semiconductors NV. | BBB-/Pos | aa | bbb | bbb+ | bbb | bbb | bbb | a+ | bbb | bbb+ | | |
| STMicroelectronics NV. | BBB/Sta | aa | a- | bbb | bbb | bbb | bbb | bbb+ | bbb+ | a | | |
| Telefonaktiebolaget LMEricsson | BBB-/Sta | aa- | a- | bb+ | bbb- | bbb | bbb- | bbb- | bbb- | bbb+ | | |

Source: Fitch Ratings.

Importance: Higher (Red), Moderate (Blue), Lower (Light Blue)

| Name | Business profile | | | | | | | | Financial profile | | | |
|--------------------------------|------------------|-----------------------|-------------------------------------|------------------------------|--------------|---------------------------|-----------------|---------------|---------------------|-----------------------|--|--|
| | IDR/Outlook | Operating Environment | Management and Corporate Governance | Sector Competitive Intensity | Sector Trend | Company's Market Position | Diversification | Profitability | Financial Structure | Financial Flexibility | | |
| ASML Holding NV. | A-/Sta | 4.0 | 1.0 | 1.0 | -1.0 | 1.0 | -3.0 | 0.0 | 2.0 | 1.0 | | |
| KLA Corporation | BBB+/Pos | 5.0 | -1.0 | 2.0 | -2.0 | 3.0 | -4.0 | 3.0 | 0.0 | 2.0 | | |
| Nokia Corporation | BBB-/Sta | 6.0 | 3.0 | -1.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 2.0 | | |
| NXP Semiconductors NV. | BBB-/Pos | 7.0 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 | 5.0 | 1.0 | 2.0 | | |
| STMicroelectronics NV. | BBB/Sta | 6.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 3.0 | | |
| Telefonaktiebolaget LMEricsson | BBB-/Sta | 6.0 | 3.0 | -1.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 2.0 | | |

Source: Fitch Ratings.

Legend: Red = Worse positioned than IDR, Blue = In line with IDR, Light Blue = Better positioned than IDR

Rating Sensitivities

Developments That May, Individually or Collectively, Lead to Positive Rating Action

- Positive rating action for ASML is unlikely in the near term. The unique nature of its business – including the cyclical nature of customers' end-markets, technology migrations that create a need for high R&D investment and the company's limited diversification – is a constraint on the rating

Developments That May, Individually or Collectively, Lead to Negative Rating Action

- Operating margins materially below 10%-15% in downturns and below 25%-30% at the peak of upcycles. However, Fitch recognises that operating losses may be incurred during extreme cyclical contractions
- Liquidity (defined as gross cash plus undrawn, committed revolving credit facilities beyond two years, less any debt maturities occurring within two years) consistently below EUR1.5 billion. The company has publicly committed to a strong cash balance
- Major loss of market share, which would signal a rapid shift in market position and probably reflect a sustained negative trend
- Funds from operations (FFO) adjusted net leverage remaining above 1.0x (equivalent to around 2.0x FFO gross adjusted leverage) on a sustained basis

Liquidity and Debt Structure

Strong Liquidity: ASML maintains a strong cash position, which covers all debt maturities for at least the next four years. The company targets a minimum gross cash buffer of EUR2.0 billion-2.5 billion. As of end-2019, ASML held EUR3,532 million in cash and cash equivalent and EUR1,186 million in short-term investments. ASML also has access to an undrawn RCF of EUR700 million maturing in 2024 with two single-year extension options to 2026.

ESG Considerations

Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of '3'. This means ESG issues are credit-neutral or have only a minimal credit impact on the entity, either due to their nature or to the way in which they are being managed by the entity.

For more information on our ESG Relevance Scores, visit <https://www.fitchratings.com/site/esg>.

Liquidity and Debt Maturity Scenario with No Refinancing

| Available liquidity (EURm) | 2020F | 2021F | 2022F | 2023F |
|---|-----------------------|-----------------------|---------------|---------------|
| Beginning cash balance | 4,718 | 6,607 | 8,210 | 9,465 |
| Rating case FCF after acquisitions and divestitures | 1,889 | 1,603 | 1,755 | 1,852 |
| Total available liquidity (A) | 6,607 | 8,210 | 9,965 | 11,317 |
| Liquidity uses | | | | |
| Debt maturities | 0 | 0 | -500 | -750 |
| Total liquidity uses (B) | 0 | 0 | -500 | -750 |
| Liquidity calculation | | | | |
| Ending cash balance (A+B) | 6,607 | 8,210 | 9,465 | 10,567 |
| Revolver availability | 700 | 700 | 700 | 700 |
| Ending liquidity | 7,307 | 8,910 | 10,165 | 11,267 |
| Liquidity Score | Not meaningful | Not meaningful | 21.3 | 16.0 |

Source: Fitch Ratings, Fitch Solutions, ASML

| Scheduled debt maturities | Original |
|---------------------------|------------------|
| Statement date | 31 December 2019 |
| 2020 | 0 |
| 2021 | 0 |
| 2022 | 500 |
| 2023 | 750 |
| 2024 | 0 |
| Thereafter | 1,750 |
| Total | 3,000 |

Source: Fitch Ratings, Fitch Solutions, ASML

ASML issued a EUR750 million bond on 25 February 2020 with a 10-year maturity.

Key Assumptions

Fitch's Key Assumptions Within Our Rating Case for the Issuer

- Revenue growing 10% in FY20 before slowing to around 5% a year
- EBITDA margin improving to 32.0% in FY20 up to 34.5% by 2022 as EUV system margin improves
- Capex (as a percentage of revenues) of 7.0% in 2020, decreasing to 5.5% in 2022
- Biannual dividends increasing 14% a year from around EUR1 billion in 2020
- Share buybacks of EUR2 billion a year from 2020 to 2022
- EUR750 million bond issued in 2020

Financial Data

| (EURm) | Historical | | | Forecast | | |
|---|------------|----------|----------|-----------|-----------|-----------|
| | Dec 2017 | Dec 2018 | Dec 2019 | Dec 2020F | Dec 2021F | Dec 2022F |
| Summary income statement | | | | | | |
| Gross revenue | 9,053 | 10,944 | 11,820 | 13,012 | 13,705 | 14,330 |
| Revenue growth (%) | 33.2 | 20.9 | 8.0 | 10.1 | 5.3 | 4.6 |
| Operating EBITDA (before income from associates) | 2,914 | 3,388 | 3,154 | 4,164 | 4,660 | 4,944 |
| Operating EBITDA margin (%) | 32.2 | 31.0 | 26.7 | 32.0 | 34.0 | 34.5 |
| Operating EBITDAR | 2,963 | 3,455 | 3,239 | 4,239 | 4,739 | 5,027 |
| Operating EBITDAR margin (%) | 32.7 | 31.6 | 27.4 | 32.6 | 34.6 | 35.1 |
| Operating EBIT | 2,496 | 2,965 | 2,785 | 3,578 | 4,043 | 4,299 |
| Operating EBIT margin (%) | 27.6 | 27.1 | 23.6 | 27.5 | 29.5 | 30.0 |
| Gross interest expense | -58 | -28 | -32 | -65 | -65 | -62 |
| Pretax income (including associate income/loss) | 2,445 | 2,951 | 2,765 | 3,532 | 3,993 | 4,251 |
| Summary balance sheet | | | | | | |
| Readily available cash and equivalents | 3,288 | 4,034 | 4,718 | 5,357 | 4,959 | 4,714 |
| Total debt with equity credit | 3,025 | 3,027 | 3,108 | 3,777 | 3,777 | 3,777 |
| Total adjusted debt with equity credit | 3,417 | 3,563 | 3,788 | 4,378 | 4,410 | 4,442 |
| Net debt | -263 | -1,007 | -1,610 | -1,580 | -1,182 | -937 |
| Summary cash flow statement | | | | | | |
| Operating EBITDA | 2,914 | 3,388 | 3,154 | 4,164 | 4,660 | 4,944 |
| Cash interest paid | -91 | -61 | -60 | -65 | -65 | -62 |
| Cash tax | -475 | -554 | -679 | -673 | -760 | -809 |
| Dividends received less dividends paid to minorities (inflow/outflow) | 20 | 89 | 100 | 90 | 90 | 90 |
| Other items before FFO | 383 | 256 | 661 | 382 | 388 | 392 |
| Funds flow from operations | 2,758 | 3,132 | 3,215 | 3,917 | 4,328 | 4,569 |
| FFO margin (%) | 30.5 | 28.6 | 27.2 | 30.1 | 31.6 | 31.9 |
| Change in working capital | -939 | -59 | 112 | -110 | -685 | -716 |
| Cash flow from operations (Fitch defined) | 1,819 | 3,073 | 3,327 | 3,807 | 3,642 | 3,853 |
| Total non-operating/non-recurring cash flow | 0 | 0 | -131 | | | |
| Capital expenditure | -358 | -610 | -886 | | | |
| Capital intensity (capex/revenue) (%) | 4.0 | 5.6 | 7.5 | | | |
| Common dividends | -517 | -597 | -1,326 | | | |
| Free cash flow | 944 | 1,866 | 984 | | | |
| Net acquisitions and divestitures | 0 | 0 | 0 | | | |
| Other investing and financing cash flow items | -899 | 123 | -186 | 0 | 0 | 0 |
| Net debt proceeds | -243 | -3 | -4 | 750 | 0 | 0 |
| Net equity proceeds | -449 | -1,124 | -383 | -2,000 | -2,000 | -2,000 |
| Total change in cash | -647 | 862 | 411 | 639 | -397 | -245 |
| Calculations for forecast publication | | | | | | |
| Capex, dividends, acquisitions and other items before FCF | -875 | -1,207 | -2,343 | -1,919 | -2,040 | -2,098 |
| Free cash flow after acquisitions and divestitures | 944 | 1,866 | 984 | 1,889 | 1,603 | 1,755 |
| Free cash flow margin (after net acquisitions) (%) | 10.4 | 17.1 | 8.3 | 14.5 | 11.7 | 12.2 |
| Coverage ratios | | | | | | |
| FFO interest coverage (x) | 31.2 | 52.1 | 53.9 | 61.4 | 66.9 | 74.4 |
| FFO fixed-charge coverage (x) | 20.7 | 25.4 | 22.9 | 28.9 | 30.8 | 32.4 |
| Operating EBITDAR/interest paid + rents (x) | 21.3 | 27.7 | 23.0 | 31.0 | 33.4 | 35.2 |
| Operating EBITDA/interest paid (x) | 32.2 | 57.0 | 54.2 | 65.9 | 72.6 | 81.1 |
| Leverage ratios | | | | | | |
| Total adjusted debt/operating EBITDAR (x) | 1.1 | 1.0 | 1.1 | 1.0 | 0.9 | 0.9 |
| Total adjusted net debt/operating EBITDAR (x) | 0.0 | -0.1 | -0.3 | -0.2 | -0.1 | -0.1 |
| Total debt with equity credit/operating EBITDA (x) | 1.0 | 0.9 | 1.0 | 0.9 | 0.8 | 0.8 |
| FFO adjusted leverage (x) | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 0.9 |
| FFO adjusted net leverage (x) | 0.0 | -0.1 | -0.3 | -0.2 | -0.1 | -0.1 |

Source: Fitch Ratings, Fitch Solutions, ASML

How to Interpret the Forecast Presented

The forecast presented is based on Fitch Ratings' internally produced, conservative rating case forecast. It does not represent the forecast of the rated issuer. The forecast set out above is only one component used by Fitch Ratings to assign a rating or determine a rating outlook, and the information in the forecast reflects material but not exhaustive elements of Fitch Ratings' rating assumptions for the issuer's financial performance. As such, it cannot be used to establish a rating, and it should not be relied on for that purpose. Fitch Ratings' forecasts are constructed using a proprietary internal forecasting tool, which employs Fitch Ratings' own assumptions on operating and financial performance that may not reflect the assumptions that you would make. Fitch Ratings' own definitions of financial terms such as EBITDA, debt or free cash flow may differ from your own such definitions. Fitch Ratings may be granted access, from time to time, to confidential information on certain elements of the issuer's forward planning. Certain elements of such information may be omitted from this forecast, even where they are included in Fitch Ratings' own internal deliberations, where Fitch Ratings, at its sole discretion, considers the data may be potentially sensitive in a commercial, legal or regulatory context. The forecast (as with the entirety of this report) is produced strictly subject to the disclaimers set out at the end of this report. Fitch Ratings may update the forecast in future reports but assumes no responsibility to do so. Original financial statement data for historical periods is processed by Fitch Solutions on behalf of Fitch Ratings. Key financial adjustments and all financial forecasts credited to Fitch Ratings are generated by rating agency staff.

Ratings Navigator

ESG Relevance:



| Factor Levels | Business Profile | | | Financial Profile | | | Issuer Default Rating | | | | |
|---------------|---------------------|-----------------------|-------------------------------------|------------------------------|--------------|---------------------------|-----------------------|-----------------|---------------|---------------------|-----------------------|
| | Sector Risk Profile | Operating Environment | Management and Corporate Governance | Sector Competitive Intensity | Sector Trend | Company's Market Position | | Diversification | Profitability | Financial Structure | Financial Flexibility |
| aaa | | | | | | | | | | | AAA |
| aa+ | | | | | | | | | | | AA+ |
| aa | | | | | | | | | | | AA |
| aa- | █ | █ | | | | | | | █ | | AA- |
| a+ | █ | | █ | █ | | █ | | | | █ | A+ |
| a | █ | | █ | █ | █ | █ | | █ | █ | █ | A |
| a- | █ | | █ | █ | █ | █ | | █ | | █ | A- |
| bbb+ | █ | | | | █ | | | █ | | | Stable |
| bbb | | | | | █ | | | | | | BBB+ |
| bbb- | | | | | █ | | | | | | BBB |
| bb+ | | | | | | | █ | | | | BBB- |
| bb | | | | | | | █ | | | | BB+ |
| bb- | | | | | | | █ | | | | BB |
| b+ | | | | | | | | | | | BB- |
| b | | | | | | | | | | | B+ |
| b- | █ | | | | | | | | | | B |
| ccc+ | | | | | | | | | | | B- |
| ccc | | | | | | | | | | | ccc+ |
| ccc- | | | | | | | | | | | ccc |
| cc | | | | | | | | | | | ccc- |
| c | | | | | | | | | | | cc |
| d or rd | | | | | | | | | | | c |

Operating Environment

| | | | |
|------|----------------------|----|--|
| aa+ | Economic Environment | aa | Very strong combination of countries where economic value is created and where assets are located. |
| aa | Financial Access | aa | Very strong combination of issuer specific funding characteristics and of the strength of the relevant local financial market. |
| | Systemic Governance | aa | Systemic governance (eg rule of law, corruption; government effectiveness) of the issuer's country of incorporation consistent with 'aa' |
| b- | | | |
| ccc+ | | | |

Sector Competitive Intensity

| | | | |
|------|-----------------------------------|-----|---|
| aa- | Industry Structure | a | Reduced number of competitors with clear leader. |
| a+ | Barriers to Entry/Exit | aa | Very high barriers to entry. Emergence of significant new entrants in the rating horizon close to impossible. |
| a | Relative Power in the Value Chain | bbb | Relative bargaining power balanced with suppliers and customers. |
| a- | | | |
| bbb+ | | | |

Company's Market Position

| | | | |
|------|-----------------------|----|--|
| aa- | Market Share | aa | Market leader in most of its segments. |
| a+ | Competitive Advantage | a | Strong competitive advantages but at some risk from competitors. |
| a | | | |
| a- | | | |
| bbb+ | | | |

Profitability

| | | | |
|------|-----------------------------|----|---|
| a+ | FFO margin | aa | 30% |
| a | EBIT margin | aa | 30% |
| a- | FCF margin | aa | 14% |
| bbb+ | Volatility of Profitability | bb | Higher volatility of profits than industry average. |
| bbb | | | |

Financial Flexibility

| | | | |
|------|------------------------|-----|---|
| aa- | Financial Discipline | aa | Publicly announced conservative financial policy. Track record of strict compliance. |
| a+ | Liquidity | a | Very comfortable liquidity. Staggered debt maturity schedule. Diversified sources of funding. |
| a | FFO Fixed Charge Cover | aa | 10.0x |
| a- | FX Exposure | bbb | Some FX exposure on profitability and/or debt/cash flow match. Effective hedging in place. |
| bbb+ | | | |

How to Read This Page: The left column shows the three-notch band assessment for the overall Factor, illustrated by a bar. The right column breaks down the Factor into Sub-Factors, with a description appropriate for each Sub-Factor and its corresponding category.

Management and Corporate Governance

| | | | |
|------|------------------------|-----|---|
| aa- | Management Strategy | a | Coherent strategy and good track record in implementation. |
| a+ | Governance Structure | a | Experienced board exercising effective check and balances. Ownership can be concentrated among several shareholders. |
| a | Group Structure | a | Group structure shows some complexity but mitigated by transparent reporting. |
| a- | Financial Transparency | bbb | Good quality reporting without significant failing. Consistent with the average of listed companies in major exchanges. |
| bbb+ | | | |

Sector Trend

| | | | |
|------|----------------------------|-----|---|
| a | Long-Term Growth Potential | bbb | Mature industry. Traditional markets may be under some pressure but opportunities arise in new markets. |
| a- | Volatility of Demand | bb | Demand fluctuations exceed economic cycles |
| bbb+ | Threat of Substitutes | aa | No medium-term risk from technological substitution. |
| bbb | | | |
| bbb- | | | |

Diversification

| | | | |
|------|----------------------------|---|---|
| bbb+ | End-Market Diversification | a | Well balanced exposure to at least three business lines or markets with different sensitivity to the economic cycle |
| bbb | Customer Concentration | b | Significant customer concentration, including more than one customer representing 10% or more of total revenue. |
| bbb- | | | |
| bb+ | | | |
| bb | | | |

Financial Structure

| | | | |
|-----|---------------------------------------|----|----------|
| aa | Lease Adjusted FFO Gross Leverage | aa | 1.0x |
| aa- | Lease Adjusted FFO Net Leverage | aa | 0.0x |
| a+ | Net Debt/(CFO - Capex) | aa | Net Cash |
| a | Total Gross Debt/FCF | a | 3.0x |
| a- | Total Adjusted Debt/Operating EBITDAR | aa | 1.0x |

Credit-Relevant ESG Derivation

| | | | | Overall ESG | | | | |
|---|---|--|--|---------------------|----|--------|---|--|
| ASML Holding N.V. has 10 ESG potential rating drivers | | | | key driver | 0 | issues | 5 | |
| ➤ | Energy consumption in operations | | | driver | 0 | issues | 4 | |
| ➤ | Water usage in semiconductor fabrication process | | | | | | | |
| ➤ | Waste usage in the fabrication and manufacturing process | | | potential driver | 10 | issues | 3 | |
| ➤ | Data security | | | | | | | |
| ➤ | Impact of labor negotiations and employee (dis)satisfaction; employee recruitment and retention | | | not a rating driver | 1 | issues | 2 | |
| ➤ | Shift in consumer preferences and social trends | | | | | | | |
| Showing top 6 issues | | | | | 3 | issues | 1 | |

For further details on Credit-Relevant ESG scoring, see page 3.

Credit-Relevant ESG Derivation

ASML Holding N.V. has 10 ESG potential rating drivers

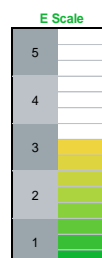
- ➔ ASML Holding N.V. has exposure to energy productivity risk but this has very low impact on the rating.
- ➔ ASML Holding N.V. has exposure to water management risk but this has very low impact on the rating.
- ➔ ASML Holding N.V. has exposure to waste & impact management risk but this has very low impact on the rating.
- ➔ ASML Holding N.V. has exposure to customer accountability risk but this has very low impact on the rating.
- ➔ ASML Holding N.V. has exposure to labor relations & practices risk and employee recruitment & retention risk but this has very low impact on the rating.
- ➔ ASML Holding N.V. has exposure to shifting consumer preferences but this has very low impact on the rating.

Showing top 6 issues

| | | | | Overall ESG Scale | |
|---------------------|----|--------|---|-------------------|--|
| key driver | 0 | issues | 5 | | |
| driver | 0 | issues | 4 | | |
| potential driver | 10 | issues | 3 | | |
| not a rating driver | 1 | issues | 2 | | |
| | 3 | issues | 1 | | |

Environmental (E)

| General Issues | E Score | Sector-Specific Issues | Reference |
|--|---------|--|---------------|
| GHG Emissions & Air Quality | 2 | Emissions from the fabrication process | Profitability |
| Energy Management | 3 | Energy consumption in operations | Profitability |
| Water & Wastewater Management | 3 | Water usage in semiconductor fabrication process | Profitability |
| Waste & Hazardous Materials Management; Ecological Impacts | 3 | Waste usage in the fabrication and manufacturing process | Profitability |
| Exposure to Environmental Impacts | 1 | n.a. | n.a. |



How to Read This Page

ESG scores range from 1 to 5 based on a 15-level color gradation. Red (5) is most relevant and green (1) is least relevant.

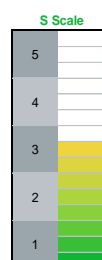
The Environmental (E), Social (S) and Governance (G) tables break out the individual components of the scale. The left-hand box shows the aggregate E, S, or G score. General Issues are relevant across all markets with Sector-Specific Issues unique to a particular industry group. Scores are assigned to each sector-specific issue. These scores signify the credit-relevance of the sector-specific issues to the issuing entity's overall credit rating. The Reference box highlights the factor(s) within which the corresponding ESG issues are captured in Fitch's credit analysis.

The Credit-Relevant ESG Derivation table shows the overall ESG score. This score signifies the credit relevance of combined E, S and G issues to the entity's credit rating. The three columns to the left of the overall ESG score summarize the issuing entity's sub-component ESG scores. The box on the far left identifies the [number of] general ESG issues that are drivers or potential drivers of the issuing entity's credit rating (corresponding with scores of 3, 4 or 5) and provides a brief explanation for the score.

Classification of ESG issues has been developed from Fitch's sector and sub-sector ratings criteria and the General Issues and the Sector-Specific Issues have been informed with SASB's Materiality Map.

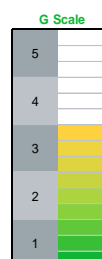
Social (S)

| General Issues | S Score | Sector-Specific Issues | Reference |
|--|---------|---|--|
| Human Rights, Community Relations, Access & Affordability | 1 | n.a. | n.a. |
| Customer Welfare - Fair Messaging, Privacy & Data Security | 3 | Data security | Sector Trend; Company's Market Position; Profitability |
| Labor Relations & Practices | 3 | Impact of labor negotiations and employee (dis)satisfaction; employee recruitment and retention | Sector Trend; Company's Market Position; Sector Competitive Intensity; Profitability |
| Employee Wellbeing | 1 | n.a. | n.a. |
| Exposure to Social Impacts | 3 | Shift in consumer preferences and social trends | Diversification; Sector Trend; Company's Market Position; Profitability |



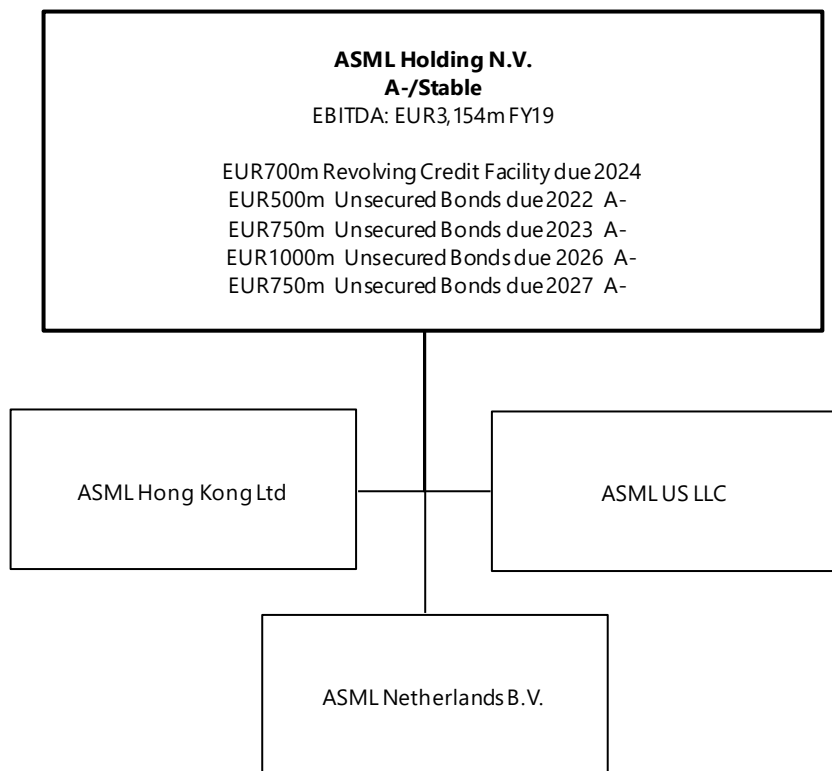
Governance (G)

| General Issues | G Score | Sector-Specific Issues | Reference |
|------------------------|---------|---|-------------------------------------|
| Management Strategy | 3 | Strategy development and implementation | Management and Corporate Governance |
| Governance Structure | 3 | Board independence and effectiveness; ownership concentration | Management and Corporate Governance |
| Group Structure | 3 | Complexity, transparency and related-party transactions | Management and Corporate Governance |
| Financial Transparency | 3 | Quality and timing of financial disclosure | Management and Corporate Governance |



| CREDIT-RELEVANT ESG SCALE | |
|--|---|
| How relevant are E, S and G issues to the overall credit rating? | |
| 5 | Highly relevant, a key rating driver that has a significant impact on the rating on an individual basis. Equivalent to "higher" relative importance within Navigator. |
| 4 | Relevant to rating, not a key rating driver but has an impact on the rating in combination with other factors. Equivalent to "moderate" relative importance within Navigator. |
| 3 | Minimally relevant to rating, either very low impact or actively managed in a way that results in no impact on the entity rating. Equivalent to "lower" relative importance within Navigator. |
| 2 | Irrelevant to the entity rating but relevant to the sector. |
| 1 | Irrelevant to the entity rating and irrelevant to the sector. |

Simplified Group Structure Diagram



ASML issued a EUR750m bond on 25 February 2020. The senior unsecured bond is due in 2030, has an issue price of 99.029% and a coupon of 0.250%. The bond is rated A-. Source: Fitch Ratings, Fitch Solutions, ASML, as of December 2019

Peer Financial Summary

| Company | IDR | Financial statement date | Gross revenue (EURm) | Operating EBITDAR margin (%) | FFO margin (%) | FFO fixed-charge coverage (x) | FFO adjusted net leverage (x) |
|---------------------------------|------|--------------------------|----------------------|------------------------------|----------------|-------------------------------|-------------------------------|
| ASML Holding N.V. | A- | | | | | | |
| | A- | 2019 | 11,820 | 27.4 | 27.2 | 22.9 | -0.3 |
| | A- | 2018 | 10,944 | 31.6 | 28.6 | 25.4 | -0.1 |
| | BBB+ | 2017 | 9,053 | 32.7 | 30.5 | 20.7 | 0.0 |
| | BBB+ | 2016 | 6,795 | 30.3 | 28.9 | 19.7 | -0.2 |
| KLA Corporation | BBB+ | | | | | | |
| | BBB+ | 2018 | 3,383 | 41.4 | 36.3 | 12.5 | -0.2 |
| | BBB+ | 2017 | 3,193 | 40.1 | 30.1 | 8.9 | 1.9 |
| | BBB- | 2016 | 2,691 | 37.4 | 27.9 | 7.3 | 2.5 |
| STMicroelectronics N.V. | BBB | | | | | | |
| | BBB | 2018 | 8,191 | 23.5 | 22.0 | 32.3 | 0.0 |
| | BBB- | 2017 | 7,385 | 21.0 | 18.4 | 20.4 | 0.2 |
| | BBB- | 2016 | 6,305 | 15.2 | 11.9 | 13.0 | 0.1 |
| NXP Semiconductors N.V. | BBB- | | | | | | |
| | BBB- | 2018 | 7,973 | 35.0 | 45.9 | 19.3 | 1.1 |
| | | 2017 | 8,189 | 37.9 | 24.0 | 8.1 | 1.5 |
| | | 2016 | 8,588 | 34.5 | 19.1 | 5.3 | 3.7 |
| Nokia Corporation | BBB- | | | | | | |
| | BBB- | 2018 | 22,580 | 13.4 | 9.8 | 5.3 | 0.1 |
| | BB+ | 2017 | 23,223 | 15.0 | 7.8 | 3.4 | -0.5 |
| | BB+ | 2016 | 23,972 | 12.9 | 5.4 | 2.9 | -1.4 |
| Telefonaktiebolaget LM Ericsson | BBB- | | | | | | |
| | BBB- | 2018 | 20,545 | 10.4 | 2.6 | 2.2 | 0.0 |
| | BBB- | 2017 | 20,957 | 8.3 | 1.1 | 1.4 | 0.3 |
| | BBB+ | 2016 | 23,527 | 12.0 | 6.3 | 3.8 | 0.1 |

Source: Fitch Ratings, Fitch Solutions

Reconciliation of Key Financial Metrics

| (EUR Millions, As reported) | 31 Dec 2019 |
|---|-------------|
| Income Statement Summary | |
| Operating EBITDA | 3,154 |
| + Recurring Dividends Paid to Non-controlling Interest | 0 |
| + Recurring Dividends Received from Associates | 100 |
| + Additional Analyst Adjustment for Recurring I/S Minorities and Associates | 0 |
| = Operating EBITDA After Associates and Minorities (k) | 3,254 |
| + Operating Lease Expense Treated as Capitalised (h) | 85 |
| = Operating EBITDAR after Associates and Minorities (j) | 3,339 |
| Debt & Cash Summary | |
| Total Debt with Equity Credit (l) | 3,108 |
| + Lease-Equivalent Debt | 680 |
| + Other Off-Balance-Sheet Debt | 0 |
| = Total Adjusted Debt with Equity Credit (a) | 3,788 |
| Readily Available Cash [Fitch-Defined] | 3,532 |
| + Readily Available Marketable Securities [Fitch-Defined] | 1,186 |
| = Readily Available Cash & Equivalents (o) | 4,718 |
| Total Adjusted Net Debt (b) | -930 |
| Cash-Flow Summary | |
| Preferred Dividends (Paid) (f) | 0 |
| Interest Received | 39 |
| + Interest (Paid) (d) | -60 |
| = Net Finance Charge (e) | -21 |
| Funds From Operations [FFO] (c) | 3,215 |
| + Change in Working Capital [Fitch-Defined] | 112 |
| = Cash Flow from Operations [CFO] (n) | 3,327 |
| Capital Expenditures (m) | -886 |
| Multiple applied to Capitalised Leases | 8.0 |
| Gross Leverage | |
| Total Adjusted Debt / Op. EBITDAR* [x] (a/j) | 1.1 |
| FFO Adjusted Gross Leverage [x] (a/(c-e+h-f)) | 1.1 |
| Total Adjusted Debt/(FFO - Net Finance Charge + Capitalised Leases - Pref. Div. Paid) | |
| Total Debt With Equity Credit / Op. EBITDA* [x] (l/k) | 1.0 |
| Net Leverage | |
| Total Adjusted Net Debt / Op. EBITDAR* [x] (b/j) | -0.3 |
| FFO Adjusted Net Leverage [x] (b/(c-e+h-f)) | -0.3 |
| Total Adjusted Net Debt/(FFO - Net Finance Charge + Capitalised Leases - Pref. Div. Paid) | |
| Total Net Debt / (CFO - Capex) [x] ((l-o)/(n+m)) | -0.7 |
| Coverage | |
| Op. EBITDAR / (Interest Paid + Lease Expense)* [x] (j/-d+h) | 23.0 |
| Op. EBITDA / Interest Paid* [x] (k/-d) | 54.2 |
| FFO Fixed-Charge Cover [x] ((c+e+h-f)/(-d+h-f)) | 22.9 |
| (FFO + Net Finance Charge + Capit. Leases - Pref. Div Paid) / (Gross Int. Paid + Capit. Leases - Pref. Div. Paid) | |
| FFO Gross Interest Coverage [x] ((c+e-f)/(-d-f)) | 53.9 |
| (FFO + Net Finance Charge - Pref. Div Paid) / (Gross Int. Paid - Pref. Div. Paid) | |
| * EBITDAR after Dividends to Associates and Minorities | |
| Source: Fitch Ratings, Fitch Solutions, ASML | |

Fitch Adjustment Reconciliation

| (EUR Millions, As reported) | Reported Values | Sum of Fitch Adjustments | Preferred Dividends, Associates and Minorities Cash Adjustments | Leases | Other Adjustment | Adjusted Values |
|--|-----------------|--------------------------|---|--------|------------------|-----------------|
| | 31 Dec 19 | | | | | |
| Income Statement Summary | | | | | | |
| Revenue | 11,820 | 0 | | | | 11,820 |
| Operating EBITDAR | 3,239 | 0 | | | | 3,239 |
| Operating EBITDAR after Associates and Minorities | 3,239 | 100 | 100 | | | 3,339 |
| Operating Lease Expense | 0 | 85 | | 85 | | 85 |
| Operating EBITDA | 3,239 | -85 | | -85 | | 3,154 |
| Operating EBITDA after Associates and Minorities | 3,239 | 15 | 100 | -85 | | 3,254 |
| Operating EBIT | 2,790 | -5 | | -5 | | 2,785 |
| Debt & Cash Summary | | | | | | |
| Total Debt With Equity Credit | 3,108 | 0 | | | | 3,108 |
| Total Adjusted Debt With Equity Credit | 3,108 | 680 | | 680 | | 3,788 |
| Lease-Equivalent Debt | 0 | 680 | | 680 | | 680 |
| Other Off-Balance Sheet Debt | 0 | 0 | | | | 0 |
| Readily Available Cash & Equivalents | 4,718 | 0 | | | | 4,718 |
| Not Readily Available Cash & Equivalents | 0 | 0 | | | | 0 |
| Cash-Flow Summary | | | | | | |
| Preferred Dividends (Paid) | 0 | 0 | | | | 0 |
| Interest Received | 39 | 0 | | | | 39 |
| Interest (Paid) | -60 | 0 | | | | -60 |
| Funds From Operations [FFO] | 3,064 | 151 | 100 | -80 | 131 | 3,215 |
| Change in Working Capital [Fitch-Defined] | 112 | 0 | | | | 112 |
| Cash Flow from Operations [CFO] | 3,176 | 151 | 100 | -80 | 131 | 3,327 |
| Non-Operating/Non-Recurring Cash Flow | 0 | -131 | | | -131 | -131 |
| Capital (Expenditures) | -886 | 0 | | | | -886 |
| Common Dividends (Paid) | -1,326 | 0 | | | | -1,326 |
| Free Cash Flow [FCF] | 964 | 20 | 100 | -80 | | 984 |
| Gross Leverage | | | | | | |
| Total Adjusted Debt / Op. EBITDAR* [x] | 1.0 | | | | | 1.1 |
| FFO Adjusted Leverage [x] | 1.0 | | | | | 1.1 |
| Total Debt With Equity Credit / Op. EBITDA* [x] | 1.0 | | | | | 1.0 |
| Net Leverage | | | | | | |
| Total Adjusted Net Debt / Op. EBITDAR* [x] | -0.5 | | | | | -0.3 |
| FFO Adjusted Net Leverage [x] | -0.5 | | | | | -0.3 |
| Total Net Debt / (CFO - Capex) [x] | -0.7 | | | | | -0.7 |
| Coverage | | | | | | |
| Op. EBITDAR / (Interest Paid + Lease Expense)* [x] | 54.0 | | | | | 23.0 |
| Op. EBITDA / Interest Paid* [x] | 54.0 | | | | | 54.2 |
| FFO Fixed-Charge Coverage [x] | 51.4 | | | | | 22.9 |
| FFO Interest Coverage [x] | 51.4 | | | | | 53.9 |

*EBITDAR after Dividends to Associates and Minorities
Source: Fitch Ratings, Fitch Solutions, ASML

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